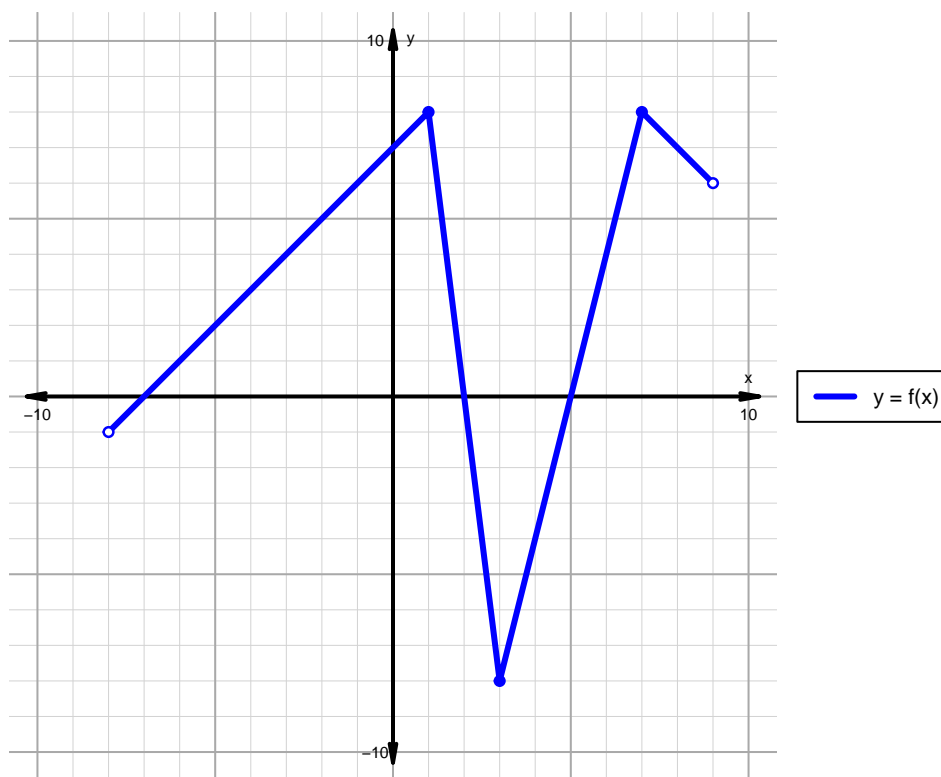


Name: \_\_\_\_\_

Date: \_\_\_\_\_

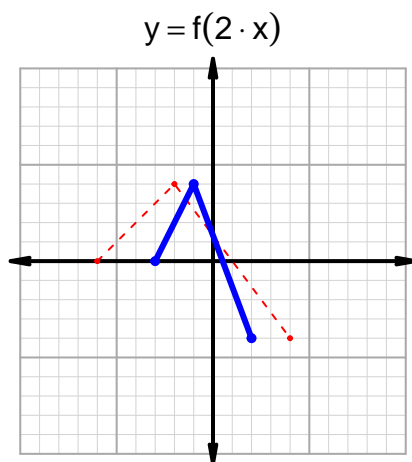
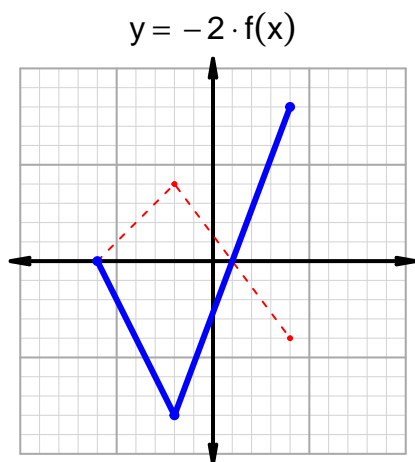
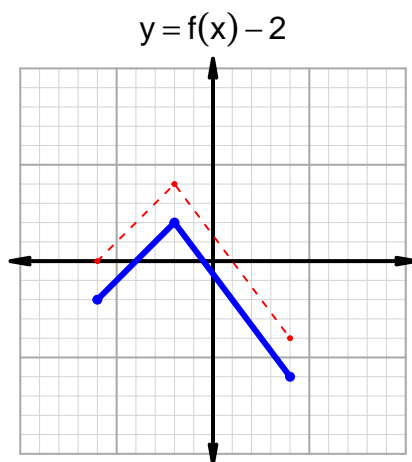
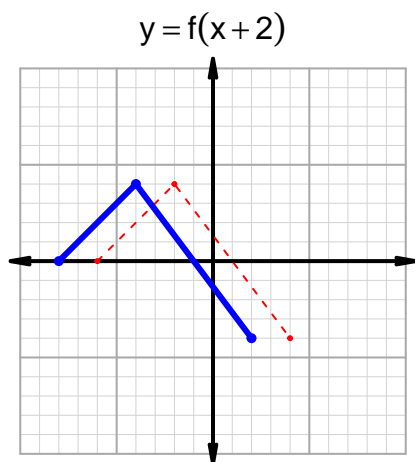
**Intervals, Transformations, and Slope Solution (version 23)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-7, 2) \cup (5, 9)$
Negative	$(-8, -7) \cup (2, 5)$
Increasing	$(-8, 1) \cup (3, 7)$
Decreasing	$(1, 3) \cup (7, 9)$
Domain	$(-8, 9)$
Range	$(-8, 8)$

## Intervals, Transformations, and Slope Solution (version 23)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 55$  and  $x_2 = 75$ . Express your answer as a reduced fraction.

$x$	$g(x)$
55	81
75	86
81	75
86	55

$$\frac{f(75) - f(55)}{75 - 55} = \frac{86 - 81}{75 - 55} = \frac{5}{20}$$

The greatest common factor of 5 and 20 is 5. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{1}{4}$$